REMARKS

Applicants respectfully request reconsideration of the present application in view of the following.

In an Office Communication dated January 9, 2009, the Examiner stated that Applicant's reply to the Office Action dated December 12, 2008 and subsequent reply to the Request for Information dated April 28, 2008 are not completely responsive. In particular, the Examiner stated the Applicants have not responded fully to the following passage found at pages 2-3 of the Office Action dated December 28, 2007:

> On page 1, lines 21-28 of the specification, applicant describes as conventional "six-degrees of freedom" testheads as claimed in newly submitted claim 22. To the examiner's knowledge and belief none of the prior art illustrates what these prior art "six-degrees of freedom" testheads actually look like and give any indication if they are used in an inverted position as claimed in new claim 23. Pursuant to applicant's responsibility under 37 CFR 56, the examiner is requiring an identification of any prior art already of record that shows such a "six-degrees of freedom" testhead. If none is of record, a carefully prepared sketch **or suitable publication showing one** is required in response to this office action including details of the prior art cooling system used to cool this prior art "six-degrees of freedom" testhead. This will greatly facilitate searching and examination of this newly claimed combination. It is understood that the assignee of the current application is engaged in the manufacture of such automated "testheads". The method and apparatus claims are starting to take on divergent limitations that necessitate a further restriction of invention to keep the examination tractable within the limited time allotted for examination. (Emphasis added).

Applicants attach herewith prior art publication Khater et al., U.S. Patent No. 6,023,173 issued February 8, 2000 (henceforth "Khater"). Khater discloses a device featuring a testhead coupled to a six degrees of freedom manipulator:

> A manipulator with an expanded range of motion. The manipulator attaches to a testing head for manipulation of the testing head for testing semiconductor devices. A vertical bearing assembly is coupled to a horizontal bearing assembly so as to give vertical and horizontal motion. An expansion joint attaches to the horizontal bearing assembly such that the length of the manipulator may be expanded and retracted. A swing arm attaches to the expansion joint such that it may rotate horizontally. A tumble assembly couples a rotary bearing assembly to the swing arm. The test head attaches to the rotary bearing assembly such that the rotation of the tumble assembly gives tumble rotation and such that the rotation of the rotary bearing assembly gives twist rotation. By rotating the swing arm, tumble rotation may be obtained by rotating the rotary bearing assembly and twist rotation may be obtained by movement of the tumble assembly. (Abstract).

Khater notes that the testhead may be used in either a standard "DUT [device under test] down" position or in an inverted "DUT up" position.

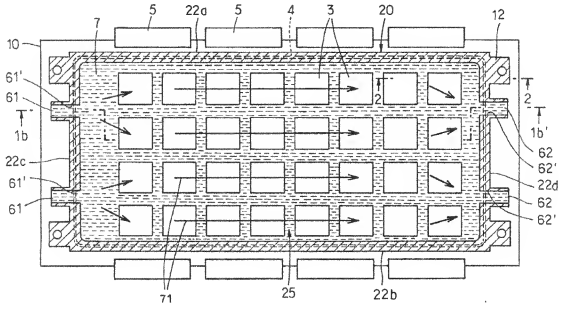
> The component systems work together to give smooth motion and easy control of the head such that testing may be accomplished for **DUT up, DUT down,** DUT side and DUT forward using the same tester. (Abstract, emphasis added).

Khater further describes the cooling of the testhead using circulating cooling liquid.

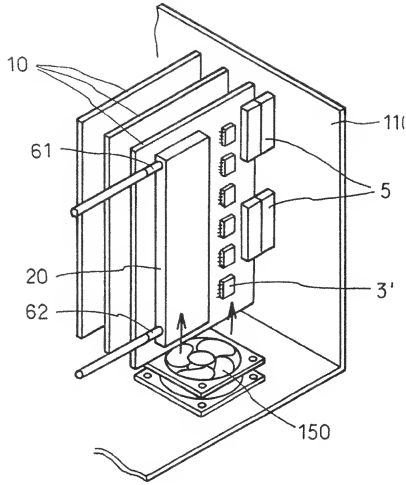
> Testing units that do pressure testing include cables that couple high pressure gas from a source to the test head. In addition, due to the heat generated by the complex processing circuitry in the test head, the test head must be cooled. One way to cool the electronic components in the test head is to circulate cooling fluids through the test head. In testing devices that circulate cooling fluids, cables conduct the cooling fluid from a heat exchanger to the test head and return the spent cooling fluid to the heat exchanger. (Khater, col. 1, lines 26-33).

For example, Khater's FIG. 1 shows "tester 100 to include cable 30 which couples test head 1 to external devices and to power supply sources and to **plumbing for cooling** and pressure testing." (col. 8, lines 15-17, emphasis added).

Khater does not show in detail the interior flow of the circulating cooling liquid through the testhead. However, several prior art references of record, e.g. U.S. Pat. Nos. 6,052,284 and 6,081,428 (mentioned at page 1, line 34 of Applicant's specification), show detailed views of liquid cooling systems appropriate for use with test head electronics. For example, see Figs. 1A (excerpted below), 3A, 7A, 8A, 9A, and 11 of the '284 patent, which show in detail the interior flow of a coolant liquid in such a cooling system.



Further, Fig. 12 of the '284 patent (excerpted below) illustrates an arrangement for both air and liquid cooling, with the airflow from fan 150 explicitly shown.



In view of the above, Applicant's respectfully submit that they have responded fully and completely to the Examiner's request to point out suitable references describing the operation and cooling of a six-degree-of-freedom testhead.

In the Notice of Non-Compliant Amendment dated January 7, 2009, the Examiner objected to an informal sketch submitted by the Applicant, stating that the sketch was incomplete. In view of the references described above, Applicants respectfully submit that the need for the informal sketch is obviated.

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date 2/6/05

By _____

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